Developing a Model to Explain Modifications to Public Transportation Accident Memorials

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Abstract: With the notable exception of modifications to memorials related to the *Titanic*, public transportation accidents have remained largely ignored by the academic community. This article fills a gap in the literature by developing a model to explain modifications which occur many years after the event. Such modifications, beyond the financial means of most individual families, are unexpected given that the lack of need to reinterpret the event, as often occurs with modifications to memorials which may have a wider social significance. The article develops a model using existing literature on transportation accident memorials, memory studies and death studies, pointing to the need for three factors: local approval, co-ordination (of both people and funds), and a trigger. In relation to the trigger, the model finds that this relates to the continuation of the bereavement process as well as potentially issues relating to 'dark tourism'. Having developed the model, it is tested against the case study of a modification made to a memorial for the world's largest single-plane crash, JAL flight JL123. The article finds, in addition to the model working for this case, there is a need for bereavement theory to be better used within studies on memorialisation.

Keywords: public transportation memorial modifications bereavement theory, Japan

Memorials surround us. They take many forms, including gravestones, cenotaphs, monuments, plaques, museums and even online tributes. Said to be a testament to humanity's desire to remember (Tuan 1980), memorials often use stone to underline the desire for permanence and to 'pass down a memory forever' (Nakamaki 2005, p. 55). Nevertheless, memorials and the memorialisation sites where they are located often change over time. This is particularly the case when memorials express a political or historical message that is embedded in dominant notions of group identity (Levinson 1998). The 'public memory' (Bodnar 1993) expressed in such memorials, and the identity attendant on that memory, is open to contestation and reinvention over time, and the memorial landscape is modified in response to such shifts. Edkins (2003) further emphasises the role of memorials in relation to state and nationhood and how they can also be used to challenge political systems.

Consequently, there are studies, such as Saunders (2018, p. 44), which argue that historical memorials are not so much static as they are subject to an ongoing process of 'becoming.'

When considering memorials for public transportation accidents,[1] however, these are primarily the more private memories of the relatives of victims and of survivors. While such accidents may be the subject of public attention for a limited period, they do not play the same role in the 'collective memory' (Halbwachs 1992) of the social group (e.g. the nation) as historical monuments to wars, heroes, revolutions, and so on. Such private memory of loss is not open to public contestation and re-interpretation over time in the way that is common for historical memory; indeed, the public meaning of a transportation accident is often quickly established via an official investigation that delivers 'lessons learned' for the future. Indeed, as the next section discusses, many public transportation accidents have no memorial at all. If a memorial is established, the need to modify, expand or reframe the resulting memorial seems less apparent and the expectation may be for them to become static or even forgotten. Yet, modifications do happen as the next section and the case study in this article demonstrate. By 'modifications', this article is concerned with those changes which require new investment (such as establishing or significantly expanding a museum or establishing a new memorial) which could not be expected to be easily be funded by a single family.

Drawing on scholarship from a range of relevant disciplines, this article develops an explanatory model for such modifications and then tests this model against a particular case study in Japan where one of the memorials to the JAL flight JL123 crash,[2] which remains the world's largest single plane crash in terms of fatalities, was modified thirty years after the crash. Although incremental changes that have occurred at the crash site itself have been previously studied (Hood 2012a; Hood 2012b; Hood 2018), the modification that is being discussed in this article has taken place at another site and cost significantly more money. Rather than being a modification which is paid for by individual families as is seen at the JL123 crash site, the modification that is being considered in this article cost ¥78m (approximately £500,000, $655,000 or €575,000) (Irei-no-Sono interview September 2017).

This article asks what factors come into play to make possible the modification of memorials to public transportation accidents, and what motivates the various actors involved to press for or to deliver such modification. In tackling these research questions, this article makes three significant contributions. First, it develops a model which explains a modification to public transportation accident memorials. Second, it demonstrates the importance of bereavement theory, as a part of death studies, in helping us to understand the significant role of the bereaved in the development of memorials. Third, the article focusses upon memorials for public transportation accidents which, other than studies on the sinking of the *Titanic* (e.g. Bergfelder and Street, 2004; Fischer 2011), have been largely ignored by researchers.

[1] Public transportation is broadly understood 'to mean transport services made available to the general public' (Glover 2011, p. 2), whether it is provided by a private company or a partly- or wholly- publicly owned organisation, and here refers to modes of transport, such as buses, trains, ships and airplanes where members of the public can travel.

[2] Japan Air Lines changed its English name to Japan Airlines in 1989. To avoid confusion, the article uses the acronym JAL, which the company has used throughout. The article uses 'JL123' to refer to the flight number. Although it is sometimes also referred to as 'JAL123', flight numbers are usually referred to using a company's IATA (International Airline Transport Association) two-letter airline designator. It should be noted that JAL tends to refer to the crash by the plane's unique registration number, JA8119.

Public Transportation Accident Memorials

To aid with providing context for this study, this section provides information about some public transportation accidents around the world, looking at ten accidents in each of three geographic areas where public transportation is widely used; Europe, Japan and the USA.

The ten accidents in each geographic area were selected using five conditions. The first condition was that at least one accident was sought from each decade from the 1950s to 2000s. This was to ensure that there was representation across a wide time span. A cut-off date of 2005 was chosen to allow sufficient time for a modification to take place. Second, at least one type of accident from bus/coach,[3] ferry, railway, and airplane was included. This was to ensure that all major types of public transportation were considered. Third, there should be at least two accidents in each of four categories based on the scale of the accident; small (between 25 and 49 deaths), medium (50 to 149 deaths), large (150 to 249 deaths) and very large (over 250 deaths). Although the number of deaths is by no means the only basis by which the scale and nature of a transportation accident can be measured, as the number is consistently reported, it is the most practical. The four categories of accident were chosen to avoid overly focussing on larger accidents. Fourth, online memorials and temporary memorials were not included as the desire to improve it with a permanent memorial could be such a significant factor that it may have skewed the ability to test the other parameters of the model developed. Fifth, accidents where the primary cause was considered to be terrorism were excluded due to the increased involvement of the state and possible widespread public interest in the event, unlike most public transportation accidents, and the concern that this could unduly influence the way in which the event may be memorialised.

Using the conditions stated above, books (e.g., Aoki *et al.* 2000 and Saigai Jōhō Sentā and Nichigai Asoshiētsu Henshūbu (eds. 2007)), online databases of transportation accidents (e.g., Bureau of Aircraft Accident Archives and Wrecksite), newspaper databases (e.g., LexisNexis and Nikkei Database), web pages established by those connected with accidents (e.g. Club Concorde (2017) and Tenerife Memorial (2017)), online maps (e.g. Google Earth) and, in some cases through personal visits to sites, were used. The final list is shown in Table 1, with shading indicating those cases where there was clear evidence, such as a newspaper article, of there having been a modification to a memorial to that event.

[3] Buses/coaches taking school trips, for example, were also included due to the low incidence of bus/coach accidents with at least 25 deaths.

Table 1 – Selected Public Transportation Accidents in Europe, Japan and the USA

Europe			
Event	**Location**	**Date**	**Deaths**
Harold And Wealdstone rail crash	London, UK	1952-10-08	112
Lufthansa flight LH005	Bremen, Germany	1966-01-28	46
Turkish Airlines flight TK981	Fontaine-Chaalis, France	1974-03-03	346
Zagreb mid-air collision	Zagreb, Croatia	1976-09-10	176
Tenerife Airport disaster	Tenerife, Spain	1977-03-27	583
Beaune coach crash	Beaune, France	1982-07-31	53
MS Herald of Free Enterprise disaster	Zeebrugge, Belgium	1987-03-06	193
Ladbroke Grove rail crash	London, UK	1999-10-05	31
Air France flight AF4590 Concorde crash	Gonesse, France	2000-07-25	113
Kaprun rail disaster	Kaprun, Austria	2000-11-11	155

Japan			
Event	**Location**	**Date**	**Deaths**
Tōya-maru rail-ferry sinking	Hakodate, Hokkaidō	1954-09-26	c.1,200*
Jōban Line derailment and collision	Tōkyō	1962-05-03	160
BOAC flight BA911	Mt. Fuji, Shizuoka	1966-03-05	124
Hidagawa bus accident	Shirakawa, Gifu	1968-08-18	104
ANA flight NH58	Shizukuishi, Iwate	1971-07-30	162
JAL flight JL350	Tōkyō	1982-02-09	24
JAL flight JL123	Ueno-mura, Gunma	1985-08-12	520
Shigaraki Kōgen railway collision	Shigarakigūshi, Shiga	1991-05-14	42
China Airlines flight CI140	Nagoya, Aichi	1994-04-26	264
Fukuchiyama Line derailment	Amagasaki, Hyōgo	2005-04-25	107

USA			
Event	**Location**	**Date**	**Deaths**
Woodbridge train wreck	Woodbridge, New Jersey	1951-02-06	86
New York mid-air collision	New York	1960-12-16	134
Yuba City bus disaster	Martinez, California	1976-05-21	29
MV George Prince ferry disaster	St. Charles Parish, Louisiana	1976-10-20	78
American Airlines flight AA191	Des Plaines, Illinois	1979-05-25	273
Pan Am flight PA759	Kenner, Louisiana	1982-07-09	153
Northwest Airlines flight NW255	Detroit, Michigan	1987-08-16	156
Big Bayou Canot train wreck	Mobile, Alabama	1993-09-22	47
TWA flight TW800	East Moriches, New York	1996-07-17	230
American Airlines flight AA587	New York	2001-11-12	265

Table by the author. Notes: Dates are listed in the order year-month-day. *The exact number is not known as some bodies were not recovered. Sources: Aoki *et al*. 2000:134-6, Bureau of Aircraft Accident Archives, CNN 2004-02-19, Cullen 2000, *East Bay Times* 2018-6-17, Gifu Prefecture 2017, *Home News Tribune* 2001-02-05, *Le Monde* 2012-7-30, NTSB 1994, Saigai Jōhō Sentā and Nichigai Asoshiētsu Henshūbu (eds.) 2007:52-6, 70-1, 87-90, 109-11, 118-23, 132-8, 143-8, 179-82; Tatlow 2008; Wrecksite 2017.

In developing the purposive list for each geographic area, a number of features became apparent. For the USA, it was hard to find sufficient cases where public transportation accidents have a memorial and which allowed the conditions detailed above to be met. Given memorials for 9/11, discussed below, for example, this was a surprising finding. Indeed, the difference in memorialisation was underlined by the fact that although a memorial for American Airlines Flight AA587, which crashed in New York just two months after 9/11, was established five years after the accident (WNYC News 2006), inspection of the crash site itself reveals that it has been returned to its original use with a house built on it. In relation to the public transportation accidents in Europe, it was found that although memorials tend to be established, issues relating to Europe being made up of different countries became apparent. For example, whereas Lufthansa Flight LH005 was operated by a German carrier and the crash happened in Germany, the memorial was established by the Italian National Olympic Committee due to a number of Italian swimmers being killed in the accident (Thies 2016). In comparison to the USA and Europe, it was noticeable that virtually all public transportation accidents in Japan had a memorial established. Further, compared to the USA and particularly Europe, there was much less variation in the nationalities of passengers or the national background of the transport provider, with BOAC flight BA911, which was both a foreign carrier and had a majority of non-Japanese passengers, being a notable exception.

In terms of modifications to memorials, there was at least one case in each geographic area (see the shaded rows in Table 1). In Europe, there were two cases, the Tenerife Airport Disaster (Tenerife Memorial 2017) and the Air France flight AF4590 Concorde crash (Club Concorde 2017). In the USA, the memorial for TWA Flight TW800 had been modified (Thomas 2006). In Japan, it was found that there were four cases where a modification had been made. However, in the case of the Jōban Line derailment and collision, ANA flight NH58, and the Fukuchiyama Line derailment the main modifications appeared to be due to the respective companies (JR East[4], ANA, and JR West) establishing training centres which also included exhibition halls or museums that had at least some reference to these crashes, although it should be noted that a new memorial at the Fukuchiyama Line crash site was, at the time of a visit there in 2017, under construction. In the case of JAL flight JL123, however, there was evidence of a modification to a memorial, in the village where the plane crashed, being done, and it is this modification which is the focus of the case study in this article. There were advantages to focussing on this case. First, compared to USA, the use of memorials for public transportation accidents in Japan appeared to be normal practice and so the focus could be on the process which led to a modification in this particular case. Second, compared to the two European cases, there would be less potential for the process to have been complicated by religious or cultural differences; the Tenerife accident involved two plane carriers and a majority of passengers from two countries, Netherlands and USA, whereas the accident occurred in Spain; in the AF4590 Concorde accident, although the carrier and accident location were both French, the majority of the passengers were German.

Constructing an Explanatory Model for Modifications to Public Transportation Disaster Memorials

Since no existing body of literature can explain the modification to a memorial for a public transportation disaster, the first task was to construct a model drawing on research from a range of disciplines. Much of transportation accident research focusses less upon the long-term responses and memorialisation and more upon the need to find the causes of particular accidents or on the immediate

[4] It should be noted that the accident occurred before the creation of JR East. However, the accident location falls within the territory that JR East has operated since the break-up and privatization of Japan National Railways (JNR).

responses. Consequently, there are studies which look for general lessons about responses to transportation accidents and disasters (e.g. Levinson and Granot 2002), and those which look at particular accidents, for example Hooper McCarty and Foecke (2008) on the sinking of the *Titanic*, Vaughan (2009) on the *Challenger* space shuttle disaster and Byers (2003) on the Air France flight AF4590 Concorde crash. Whilst there may be salutary lessons to be learnt after an accident, this is primarily done through an investigation which leads to changes in regulations, laws, designs in transport and such like (Latipulhayat 2015, p. 315, p. 323). In other words, the important lessons are for those in the related industry or industries rather than the public, and so memorials tend to play a relatively small role in this respect.

When considering studies that do home in on memorials relating to transportation, there are two main bodies of scholarship. First, there are those that focus on high-profile incidents, for example, Murchú (2015) in relation to the sinking of the *Lusitania*, Van Riper (2012) in relation to the astronauts killed in US space rockets and shuttles, Phelps (1999) in relation to Princess Diana's death in a car accident, and Bergfelder and Street (2004) and Fischer (2011) on the sinking of the *Titanic*. The level of public interest in such events is not comparable to most public transportation accidents and the way in which they are memorialised is better considered within memory studies or 'dark tourism' as discussed below. Second, there has been a growing number of studies in the past two decades on roadside memorials. Road traffic accidents are arguably more comparable to the majority of public transportation accidents in that they do not generally garner the widespread long-term public interest like the events in the first group.

Road Traffic Accident Memorialisation

A common finding in many of the studies on road traffic accident memorialisation is that the memorials are primarily for the bereaved and that an important aspect of the memorial is their location. Klaassens *et al.* (2009) conducted research on over 300 memorials in the Netherlands and highlight the 'protracted discussions that a number of bereaved had with local authorities' (2009, p. 193) with the latter sometimes having objections due to 'safety concerns' (Klaassens *et al.* 2009, p. 193). MacConville (2010, pp. 35-6) and Tay (2009) also note the concerns about memorials being a hazard through distracting drivers. As well as safety concerns about the positioning of memorials, Reid (2013, p. 7) found that many residents do not want to have 'continual reminders of someone's death in a traffic accident'. In coming to understand how the memorial is established, Clark and Cheshire (2004, p. 211) point to the significance of having official approval, usually in the form of local authority support for the memorial. Similarly, Collins and Rhine (2003), while noting that the bereaved have a preference for the location of a memorial to be where the loved one died, also point out that without the support of the local authority this will not be possible.

In other words, although the literature on the memorialisation of road traffic accidents primarily considers the establishment of a permanent memorial rather than a modification to an existing memorial, it points to the significance of **local approval**; i.e. that there is a process, usually through engagement with local authorities, who will take into account the concerns of local residents, for example. This process needs to be successfully negotiated for the memorialisation to occur. Needless to say, as well as being present for the establishment of a memorial site in the first instance, such local approval will also be vital to the chances of success of any subsequent modification.

Memory Studies

Research in memory studies provides useful insights into the memorialisation process. Public transportation accidents often involve many families from different backgrounds and for whom the only significant feature that unites them is that, by chance, their loved ones happened to be killed in the same accident. Within memory studies there are some who highlight the importance of the bereaved. For example, Winter and Sivian (2000, p. 9) point to 'collective remembrance as the outcome of agency, as the product of individuals and social groups who come together, not at the

behest of the state or any of its subsidiary organizations'. The Anne Frank House in Amsterdam has seen a number of modifications over the years, all of which have been co-ordinated by the foundation that was set up in 1957 to oversee the house (Hartmann 2013, p. 636). In the case of memorials for 'comfort women' in Taiwan, Chou (2009) points to the central role that the Taipei Women's Recue Foundation, a civil society group, has had in improving a site used during the Japanese occupation of the island. In some cases, whilst co-ordination of particular groups exists, there may in fact be multiple groups claiming to represent victims' interests, whose different views cannot be reconciled. This can lead to multiple memorials and modifications to them. Nowhere is perhaps more illustrative of this than the various sites that 'make up the shifting 9/11 memoryscape in New York City' (Sather-Wagstaff 2011, p. 28). What these cases illustrate is that, in terms of memorialisation, it is possible for civil society groups, whether of victims or representing their interests, to effect modification from the bottom up under the right circumstances.

As well as pointing to the significance of the co-ordination of people, Kelly (1997), Hartman (2013) and Stevens and Sumartojo (2015), for example, also point to the need for there to be co-ordination of funding for the modification to be realised. Given that this study is considering modifications to memorials which cost a sum of money which would be beyond the means of most individuals, clearly the co-ordination of funding is similarly important. The memory studies literature shows that there is no single way in which this happens. Kelly (1997, p. 50) notes that whilst Congressional authorisation for a memorial for the *USS Arizona* happened in 1958, it took a further three years for funds to be appropriated. In the case of the Anne Frank House, the foundation was supported by local politicians and other civic leaders in getting donations so that it could buy the buildings next to house, enabling the museum to be developed (Hartmann 2013, p. 636). The Bomber Command Memorial in London, which cost £6 million, was publicly-funded (BBC News 2012-6-28). Additionally, Eyre (1997, p. 452) points out that the United Kingdom, for example, has a Charity Law which can aid with the funding of memorials which are 'for the benefit of the community' and that 'Disaster trust funds' are sometimes used to finance memorials. Some memorials may also have entrance fees, allowing for the collection and retention of money, which can then also be used for modifications to the memorial, as will be discussed within the framework of 'dark tourism' below. Whatever the source, or sources of money, it is another aspect that requires co-ordination. In summary, the key finding from the memory studies literature is that there needs to be **co-ordination**, both of people and funds.

'Dark Tourism'

Research on death studies contains two areas that appear to provide factors that will aid in understanding why a memorial is modified after many years. The first relates to 'dark tourism', which can be understood as the process by which people travel to 'places of death, violence, and tragedy that are made amenable to tourism in some manner' (Sather-Wagstaff 2011, p. 68). The second area has its origins in psychology, and particularly bereavement theory.

Interestingly, in relation to this article's focus on memorials for public transportation accidents, Lennon and Foley (2004, p. 8) suggest that the memorialisation of the *Titanic* marks the starting point of 'dark tourism'. Although there may not be other examples of public transportation accidents which have caught the public imagination in the same way as the *Titanic*, the literature on 'dark tourism' relating to other events helps to explain how memorials may be modified due to, or in order to get, improved income. Lennon and Foley (2004, p. 11) argue that 'dark tourism' sites include 'elements of commodification and a commercial ethic which (whether explicit or implicit) accepts that visitation (whether purposive or incidental) is an opportunity to develop a tourism product'. Although Hohenhaus (2013, p. 149) points out there is almost no commercialisation at the Rwandan genocide sites, which are considered as 'dark tourism' sites, Sather-Wagstaff (2011, pp. 82-4) highlights that commercialism was so rampant around the site of the former World Trade Center towers that it became referred to 'NineElevenLand' in an editorial cartoon that appeared in *The New York Times*. Even though not all memorials will have an entry ticket, many will have a shop or eating

establishment. Despite the fact that Seaton (2009, p. 87) acknowledges that many feel 'it is unacceptable to profit from the dead', Brown (2013, p. 273) suggests that the general trend in reduced income from governments for the funding of such sites makes it more likely that they will 'rely even more heavily on the income raised by their shops'. In the context of the discussion in this article, the motivations of the 'dark tourists' for visiting a site are not of concern, only that some modifications to memorials may be an attempt to improve tourist revenue. This increased revenue may in turn lead to further modifications, as Shackley (2001) discusses in relation to Robben Island. In other words, what the literature on 'dark tourism' points to is that tourism is a **trigger** for modification, either responding to increased levels of interest in an event or person being memorialised, or to the expectation that a modification to the memorial will boost visitor numbers and income.

Bereavement Theory

Another branch of death studies provides a different, compelling explanation for what the trigger is. Whilst Jay Winter (1995) and Caroline Winter (2009), for example, mention bereavement and the psychological aspects of memory studies, death studies addresses the psychological reasons for the memorialisation process, drawing upon theories relating to bereavement.

Over the years, various iterations of bereavement theory have been developed which suggest that there are many stages of bereavement, with Lindemann (1944) and Kübler-Ross (1969) having suggested five stages, and Bowlby (1973) and Parkes (1998) having suggested four stages. Worden (2001, pp. 37-53), who points out that there have even been suggestions that there up to 12 stages of mourning, puts forward four 'tasks of mourning', underlining the concept that there are particular stages of bereavement to be gone through, but arguing that they do not necessarily occur in a linear fashion. While being mindful of the fact that Stroebe and Schut (1999, p. 203), Rosenblatt (1993) and Buglass (2010, p. 45) all point out there can be significant cultural and religious differences in how people respond to grief, it is important to note that one concept that is absent is in all of the various theories put forward is 'closure'. Stroebe and Schut (1999), for example, emphasise that there is no 'closure'. Similarly, Stevens and Sumartojo (2015) state that rather than reaching 'closure', the 'bereaved person negotiates and renegotiates the meaning of their loss over time'. In other words, bereavement continues until that individual also dies.

Perhaps due to its emphasis on the bereavement of the individual rather than of a group, bereavement theory has not been widely adopted to help explain memorialisation, particularly of multi-death events. Woodthorpe's (2011) study of individual behaviour at the City of London Cemetery and Crematorium is an exception, concluding that 'clearly much is to be gained from examining memorialisation through the lens of bereavement theory' (Woodthorpe 2011, p. 32). Not only does bereavement theory help us to understand that memorialisation can continue until the person doing the memorialising also dies, it also suggests that unless the bereaved are at the stage of 'acceptance', discussion about a possible modification to a memorial is unlikely, particularly if they are at either of the stages of 'denial' or 'anger'. Furthermore, in order to explain why a modification to a memorial may happen many years after the deaths which are being memorialised, studies by Carr and Utz (2002, p. 80), Klass (2006, p. 849) and Rosenblatt (1983) offer a possible reason by pointing to the importance of anniversaries to the bereaved. The significance of anniversaries is further supported by memory studies scholarship such as Nora (1989, p. 12) and Ashplant *et al.* (2000, p. 4) who note that an 'anniversary boom' has been a factor in the increased salience of 'war memory'.

In summary, existing literature points to a number of factors which can be incorporated into a model for analysing the causes of modifications to a public transportation accident. The memorialisation of transportation accidents revealed the importance of **local approval**; the need for good links between the bereaved and the authorities in the place of the memorial who need to be mindful of the location of the memorial itself. The literature on memory studies highlights the importance of **co-ordination** of both groups representing victims' interests and funds for the modification. Finally, the literature on death studies points to the need for there to be a **trigger**; literature based on bereavement theory

suggests that the stage of the bereavement process is critical and that the modification may come many years after the deaths, whereas other literature suggests ‘dark tourism’ may play a contributary role.

Modifications to the JL123 Memorialisation Site

In the following analysis of the JL123 case, the article shows that the key features of the model were all found, although in terms of the trigger, it was the stage of bereavement that was more significant than ‘dark tourism’ considerations.

In order to test the model, fieldwork trips were made to Japan and all of the sites listed in Table 1 were visited at least once. As a Japanese speaker, it was possible to access Japanese materials and interview relevant stakeholders. Interviews were held with over twenty bereaved families, those who oversee the memorials and sites where they are located, with representatives of companies involved in the accidents themselves, journalists and with others in the areas where accidents happened. Due to ethical considerations, and the nature of the subject being discussed, many of the bereaved remain anonymous. Others, in part due to their role in providing leadership to the bereaved of a particular accident or from their interactions with the media, for example, were happy to be named. This includes Mrs Miyajima and Mrs Ozawa of the 8/12 Renrakukai, which is the main organisation for the bereaved of the JL123 plane crash, as well as Dr Kawakita and Mr Mathews who also lost loved ones in the JL123 plane crash.

JAL flight JL123 crashed in mountains in Gunma prefecture, north-west of Tōkyō on 12 August 1985. Of the 524 crew and passengers on board the Boeing 747, all but four were dead by the time search and rescue teams reached the crash site (AAIC 1987). Despite the fact that JL123 remains the world’s single largest plane crash, few studies have been conducted on its memorialisation, with Aoyama (2010), Hood (2012a, 2012b), Kadota (2010, 2012), and Nishimura (2015) being the notable exceptions, but all of these pre-date the modification that is considered in this article.

There are three main memorial sites relating to JL123. The crash site itself is known as Osutaka-no-One, literally ‘the Ridge on Osutaka’, reflecting the widely-used, but inaccurate, name of the mountain upon which the plane was reported to have crashed by some of the media in 1985 (Kawamura 2004, p. 2). Whilst the site is within Ueno-mura, the topography means that it is 20km from the centre of the village by road, and, although improvements have been made to the road over the years, it can still take some 40 minutes to drive to the car park, after which there is still a climb of 182m.

In the centre of Ueno-mura is a memorial called Irei-no-Sono (literally ‘place for comforting the spirits’). The centre piece of the site is two 11-metre tall towers (see Figure 1). Behind this is a list of most of the victims. There is also a crypt behind the towers set into the hillside which contains the cremated remains which could not be identified. Also at Irei-no-Sono are a number of other statues, memorials, and resting places. Irei-no-Sono was completed at a cost of ¥400 million in time for the first anniversary (Irei-no-Sono interview 2017). A small exhibition hall was also established at the site, containing a selection of photographs, books (in a display cabinet which could not be opened by visitors) and other items, but with almost no accompanying explanation about the crash or the items. However, a modification in 2015 saw the floor space increased by 50%, a wide range of documentary and explanatory materials being put on display, as well as some unclaimed items belonging to victims (Irei-no-Sono interview 2017). The village ‘was keen to have included explanations of what the people from the village did in response to the crash included’ and ‘this was something that the bereaved families also demanded’ (Miyajima interview, September 2017). Rather than looking at the cause of the crash, the primary focus is upon the way in which the crash impacted the bereaved and

the local people and even contains a section about the plants that can be found at the crash site. The modification, which effectively turned the hall into a museum, cost ¥78m (approximately £520,000) (Irei-no-Sono interview September 2017). This modification is more than about making enhancements due to technological changes as has been seen at the Hiroshima Peace Museum over the years, for example (Schäfer 2008, p. 167), as it was a complete revitalisation of how the crash is remembered and done so in a much greater space than before. It is the modification at Irei-no-Sono which is tested against the model developed above.

Figure 1 – Irei-no-Sono. Top: The main memorial with the museum building on the left-hand side. Bottom: a view of the main display area within the museum at Irei-no-Sono

The modification at Irei-no-Sono is not only surprising due to it happening 30 years after the crash, but also because there was already another museum-like memorial which had been established nine years earlier when JAL opened its Safety Promotion Center, which is housed within a JAL building close to Tōkyō's Haneda airport. Whilst it is not exclusively about JL123, and it is primarily intended to be part of the company's training facilities (JAL Safety Promotion Center interviews 2007, 2019), the display of items from the wreckage, victims' belongings and other items means that it is a JL123 crash museum by any other name. Indeed, other accidents covered in the Center are not presented to the same level of detail (for example, no wreckage of the plane is presented). Members of the public can visit the Center, although they must contact JAL in advance. The design of the Center, and subsequent adjustments over the years, was done in consultation with the bereaved, some of whom visit the Center to be involved with training events and speak to JAL employees (JAL Safety Promotion Center interviews 2007, 2019; Miyajima interviews 2009, 2017; Ozawa interview 2017).

Considering the modifications made to the memorial at Irei-no-Sono, it is first important to understand what Ueno-mura itself is like. The suffix '*mura*' means 'village' and, despite having an area of some 181km^2, as it is a very mountainous area, of which 95% is covered by trees, there are only some 588 homes and its population was a mere 1,198 in July 2018 (Ueno-mura 2011, 2018).[5] Most of the housing is found along a 9km valley stretching across the village.

While Irei-no-Sono is quite central in the village, it is tucked away and not visible from the principal local roads and must be accessed by a steep, narrow road. Even though there are road signs to Irei-no-Sono, there is nothing about its name which indicates its link to a crash. In other words, when considering the literature on road traffic accident memorials, where it was found that many find the memorials to be a distraction (Klaassens *et al.* 2009), and others do not want a constant reminder of the crash (Reid 2013), this is not an issue with Irei-no-Sono. However, while the literature pointed to the preference for memorials to be at the accident site (Collins and Rhine 2003), this is not the case for Irei-no-Sono. Indeed Ozawa (interview 2009), for example, has commented that 'the bereaved have less connection with the site' for that reason. In terms of the museum, it would be impractical for one to be established at Osutaka-no-One due the lack of access to the site for about six months of the year due to snow and the relative inaccessibility of the site.

Local Approval

A key part of local approval in the model relates to the need for there to be good relations with the local authorities. This has clearly happened with the JL123 case, with the mayor of the village in 1985, Takeo Kurosawa, being not only involved in ensuring that Irei-no-Sono was established but also looking to find ways to support the bereaved families (Miyajima interview 2009). Indeed, many believe that the main reason why Ueno dam was built was so that new roads would also be built, significantly reducing the journey time to Osutaka-no-One (anonymous interviews). This support to the JL123 bereaved has been continued by subsequent mayors (Miyajima interview 2017) and the bonds between the local people and the bereaved is particularly visible around the time of the anniversary of the crash each year. Consequently, it is clear that local approval has been met in the case of the modification to the Irei-no-Sono memorial. Indeed, and leading on to the next aspect of the model, Jun'ichi Takase of the Ueno-mura local government (interview September 2017) noted that the mayor has said that they 'will always continue' to support the activities. That, as stated above, there were aspects which the village itself also wanted to see included within the museum, aided in the collaboration between Irei-no-Sono and the bereaved in both bringing about modification and also agreeing on the modifications (Irei-no-Sono interview 2017; Miyajima interview 2017).

Co-ordination

In terms of the importance of groups representing victims' interests, it is important to note that the bereaved are not necessarily a united group. The 520 victims equated to 401 families (8/12 Renrakukai 2005, p. 4). Amongst the individual memorials at Osutaka-no-One, some joint memorials can also be found, some carry the name '8/12 Renrakukai' and others 'IREI Air-Safety Group'.

The 8/12 Renrakukai was established in December 1985 at a meeting attended by many of the bereaved (8/12 Renrakukai 2006, p. 22). The name of the association, literally 8/12 Contact Association, reflects the fact that members did not want to have the word 'bereaved' (*izoku*) in the title as it was 'overly negative' (Miyajima interview 2009). The key purpose of the group was to provide support to its members, discuss compensation, and to try to understand the cause of the crash (Miyajima interview 2009). The chairperson of the association at its establishment, and remains, Kuniko Miyajima. Miyajima became the most well-known of the bereaved just a few days after the

[5] The village, like many municipalities in Japan, has been experiencing depopulation. For comparison, its population was 2,083 at the time of the JL123 crash (Uenomura no Chishi Shippitsusha 2003, p. 46).

crash when she was filmed desperately searching the crash site for her 12-year-old son, Ken, who had been travelling by himself for the first time (Miyajima interview 2009; Hood 2012a, p. 158). Women are often central in the workings of civil society in Japan (Hui 2005; Scott 2008), but the fact that Miyajima carried out this role for so long and has also often handled dealings with the media has given both her and the 8/12 Renrakukai a degree of authority when it comes to the JL123 bereaved. The same cannot be said for the IREI Air-Safety group (Kōkū Kokusai Rarī Soshiki Iinkai). This group was not a rival association, but rather one that was much more focussed upon looking at the cause of the crash and the lessons which could be learnt from it, particularly relating to seat and cabin design (Kawakita interview 2009). However, it also had views on the memorialisation of the crash, and although the memorials it established did not reflect the salutary nature of its work, the group's views on the memorialisation at Osutaka-no-One were not shared by some others (anonymous interview). Much smaller in size than the 8/12 Renrakukai, its activities were primarily led by Dr Kawakita and as his health deteriorated, so the activities of the group also lessened (Kawakita interview 2009). By the time that Kawakita passed away in 2011, IREI Air-Safety's activities had effectively come to an end, leaving the 8/12 Renrakukai, particularly through the work done by Miyajima and others such as Mrs Ozawa, to co-ordinate and represent the bereaved. Through meetings, both formal and informal, a regular newsletter ('*Osutaka'*), and other publications, the 8/12 Renrakukai has become a seemingly united voice for a critical mass of those JL123 bereaved who want to be heard. The fact that Ueno-mura also 'liaise with the 8/12 Renrakukai' when any maintenance work of any sort is done to roads to Irei-no-Sono or Osutaka-no-One, for example (Takase interview, September 2017), further underlines their significance in relation to co-ordination and to aiding with local approval.

The other aspect of co-ordination that the model indicates is necessary is that there has to be co-ordination of funding. Irei-no-Sono is funded through a foundation, the Irei-no-Sono Foundation (Kōeki Zaidan Hōjin Irei-no-Sono), which was established with significant funds. Its original funding came from JAL with a fund of ¥500m in 1986, with further sums of ¥300m, ¥6m and ¥5m added in 1988, in 2009 and 2010 respectively (Irei-no-Sono interview 2017). As well as being used for the original construction of Irei-no-Sono (about 25% of the funds for this also came from Ueno-mura (Irei-no-Sono interview 2017)), money has been used to fund some of the road improvements to Osutaka-no-One, publications by Irei-no-Sono, the annual memorial services and other on-going costs (Irei-no-Sono interview 2017). The foundation's finances remain healthy with ¥741m reported in capital in 2015 (NOPODAS 2018). In other words, the modification to the memorial in 2015, whilst significant in terms of total cost, represented only 10% of the Foundation's total capital.

In summary, both aspects of the co-ordination factor of the model have been met. Further, the use of a Foundation, based in Ueno-mura, which has close links to both the 8/12 Renrakukai and the Ueno-mura local government aids the local approval factor.

Trigger

As noted in developing the model, the nature of bereavement process may provide an important trigger that contributes to the modification to a memorial. The literature reveals that there are various theories about bereavement, and amongst these Worden (2001) suggests that it is not a linear process. Identifying what stage the bereaved are at, keeping in mind that in the case of JL123 there are many different families whom may be at different stages is inherently difficult. However, having established the significance of the co-ordinating role of the 8/12 Renrakukai, ascertaining the stage at which the key members of this organisation were/are at is paramount. Both Miyajima and Ozawa note that they went through stages of 'anger' during which time they could not think about things such as improving the memorial at Irei-no-Sono, but this was less of a problem in recent years (Miyajima interview 2017, Ozawa interview 2017). Indeed, it was not until 20 years after the accident that people realised the situation had changed. At that time, some JAL staff interviewed Miyajima, Ozawa, and other bereaved families about how they felt about the crash. Mrs Ozawa (interview September 2017) said

that ‘it was time to stop thinking of JAL as the “perpetrators” [of the crash] and the bereaved families as the “victims” and for all to work together to promote aviation safety. Afterwards I spoke to Mrs Miyajima and found that she had said the same thing.’

The way in which the bereavement process continues can be seen by the way in which families mark the anniversary of the crash. Data about the number of bereaved going to Osutaka-no-One and Irei-no-Sono on the anniversary of the crash is collected each year and reported in the media (see Figure 2). It is possible to see from this that not all families go to Ueno-mura for the anniversary, further underlining the variation in behaviour across the bereaved. Over the years, many bereaved themselves have passed away. Others, as they have aged, have found it difficult to travel to Ueno-mura, and amongst those that have gone there, some restrict themselves to going to Irei-no-Sono as they cannot make the climb to Osutaka-no-One (Kawakita interview 2009; Mathews interview 2010). Despite this, it is possible to see that the memorialisation has been on-going by some of the bereaved and that there are certain years when there are notable increases in either the number climbing to Osutaka-no-One, attending the anniversary ceremony at Irei-no-Sono or both, confirming the point made by existing literature about the significance of key anniversaries. In the case of JL123, some increases relate to the round-numbered anniversaries, whilst most of the others (1987, 1991, 1997, 2001, 2007, 2011 and 2017),[6] as noted on the figure itself, relate to key Buddhist anniversaries whereby the bereaved will mark the third, seventh, thirteenth, seventeenth, twenty-third, twenty-seventh, thirty-third, thirty-seventh, and fiftieth anniversaries (Smith 1974, p. 96).[7] In this respect it would appear that in Japan religious practice helps to reinforce the never-ending bereavement process. As noted above, it was not until the 20th anniversary that it really became apparent to the families themselves even how similar the views of some of them had become and that they were at a stage of ‘acceptance’ in the bereavement process. Some of the bereaved had found the old Irei-no-Sono’s hall as being ‘frightening as it was so dark’ to the extent that ‘us bereaved families rarely went in it’ (Ozawa interview September 2017) and so, although many felt it was always in need of ‘improvement’ (Ozawa interview September 2017), it was not until many years later that the ‘timing was right’ (Ozawa interview September 2017) for discussions to happen about what modification should and could be done. That the 30th anniversary was approaching also focussed everyone’s attention on what could be done (Miyajima interview 2017).

[6] There was a decrease in 1987 in comparison to 1986 for the number going to Irei-no-Sono due to the additional number of people who were invited for the first anniversary and opening of Irei-no-Sono. The only other years which saw a significant increase are 1989 (the first anniversary to fall on a Saturday), 2004 (the journey time from the village to Osutaka-no-One was reduced by a third by using shuttle buses and the road for building Ueno dam), and 2009 (many families had not travelled in 2008 due to a rock-fall closing the road to Osutaka-no-One. Additionally, new hand-rails were installed at Osutaka-no-One to make the climb easier).
[7] It should be noted that this is done whereby the year of death is counted as being the first year. Consequently, the ‘third anniversary’ of an individual’s death for someone who died in 1985 would be 1987 not 1988

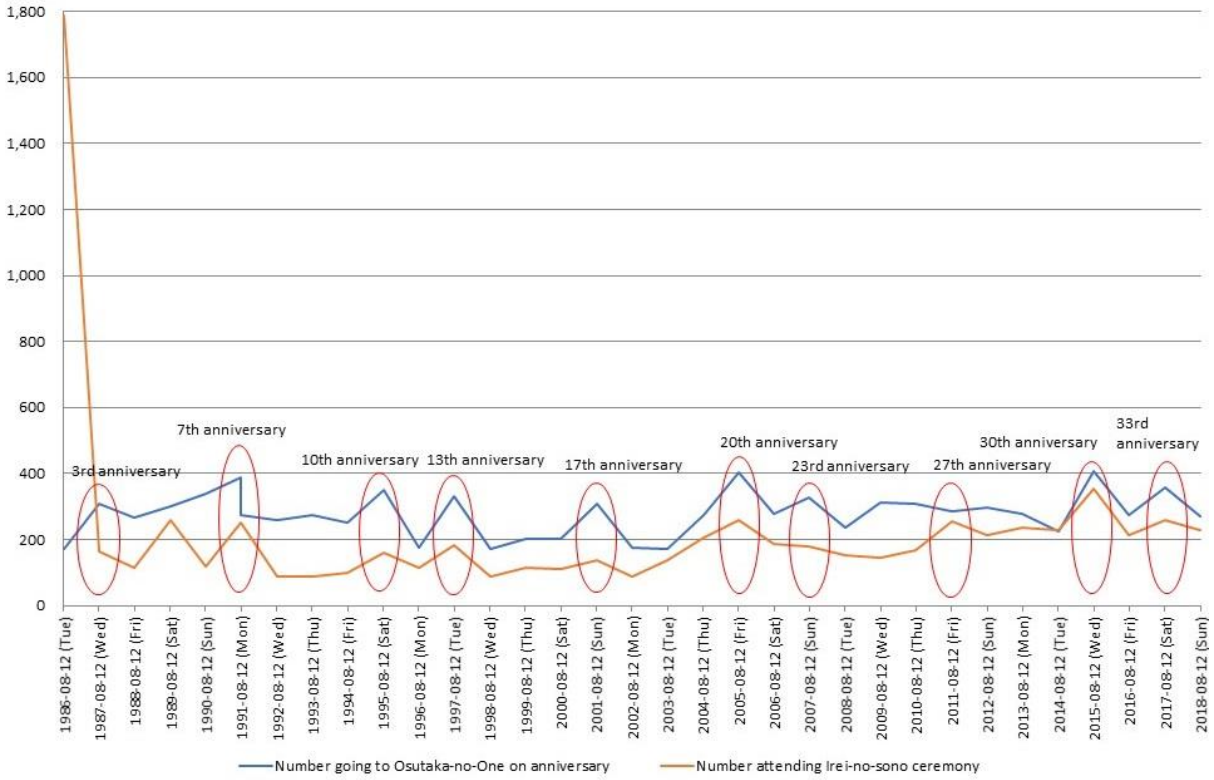

Figure 2 – The number of people from bereaved families attending the Irei-so-Sono anniversary event and climbing Osutaka-no-One on the anniversary. Note: Two ceremonies were held in 1991 due to the significance of the seventh anniversary in Buddhism.

Turning to another possible trigger, 'dark tourism', rather than what may be causing any such demand,[8] the focus is on whether there is evidence of such a demand leading to the modification of the memorial at Irei-no-Sono. In 2016, the number of recorded visitors to Osutaka-no-One was 11,752, 20% higher than in 2014,[9] and the number of visitors to Irei-no-Sono was 21,759, an increase of 12.5% (Irei-no-Sono interview 2017).[10] Despite these significant rises, it is important to note the lack of promotion of Irei-no-Sono or Osutaka-no-Ono as sites to visit that is done by either the 8/12 Renrakukai or Ueno-mura. The 8/12 Renrakukai's own web pages have no mention of the sites.[11] Similarly, there is no information on Ueno-mura's website or on its YouTube channel about either Osutaka-no-One or Irei-no-Sono as the village 'do not want to promote the sites as tourist sites' (Takase interview, September 2017).[12] There are a variety of visitor maps and guides produced by the village and other organisations in the village. Of the five obtained in September 2017, all noted the location of Irei-no-Sono, but only one had a hand-drawn picture of the towers of Irei-no-Sono and none used a photograph of the site or had any explanation about what it is. If a visitor has gone to Ueno-mura specifically to visit Irei-no-Sono, or indeed Osutaka-no-One, they will find them, but for others, there is no encouragement to visit them. The village does not want the crash to be forgotten,

[8] For discussion about what the reasons may be for the interest in the JL123 crash so many years after the event see Hood 2012a, pp. 172-98.
[9] There is a hand-held counter at the entrance to the path up to Osutaka-no-One and visitors are asked to click it so that the number of visitors can be recorded. The person who maintains the site records the number at the end of each month and then resets the counter. It is questionable whether all visitors actually use the counter.
[10] As there is no admission to be paid at Irei-no-Sono, the number of visitors to the site is recorded on a piece of paper by a person based in the museum building.
[11] http://8-12.moo.jp/ checked on 16 January 2019.
[12] The Ueno-mura homepage is http://www.uenomura.jp/ and the YouTube channel is https://www.youtube.com/user/UenoVillageOfficial Both were checked on 15 January 2019.

but it is not doing anything to actively encourage people to go there despite the fact that there is clearly interest in the crash and the village itself needs to try to attract visitors (Irei-no-Sono interview 2017). At Irei-no-Sono itself, which is free to enter, there is no commercialism which, as noted above, is often regarded as being one of the key components of 'dark tourism'. Although Miyajima (interview 2017) and Ozawa (interview 2017) are aware of the external interest in the crash, and that this interest may be growing, they say that this was not a motivating factor in seeking the modifications at Irei-no-Sono. Therefore, contrary to what had been expected when the research for this article was started, 'dark tourism' was not a factor despite the scale of this particular accident.

Whilst the museum at Irei-no-Sono has been modified, it is still not high tech. Furthermore, the finances of the Irei-no-Sono Foundation suggest that more could have been done had there be a desire to do so. For example, given that many families still question what the actual cause of the crash was (Miyajima interview 2017, Ozawa interview 2017), the memorial at Irei-no-Sono could present a different narrative to that at the JAL Safety Promotion Center. However, the modification is still significant and a clear improvement to the way things were presented. Thanks to the good relations and bonds with the local authorities and local area, which is now the focus of much of the museum, the co-ordination of the 8/12 Renrakukai, and the stage in the bereavement process that key actors in the 8/12 Renrakukai were at, a point had been reached when a modification could happen.

Conclusion

As noted in the introduction, memorials relating to public transportation accidents have remained largely ignored by the researchers. In that respect, this article addresses a significant gap in the literature. Furthermore, it has developed a model to explain modifications to memorials for public transportation accidents, drawing on a review of the relevant literature on the memorialisation of transportation accidents, memory studies and death studies. Three factors were identified as being significant: **local approval** (good links between effective organisations representing the bereaved and the local authority, which needs to consider local issues), **co-ordination** (both of the bereaved and of the funds for the modification), and **the need for a trigger**. In relation to the trigger, the review of death studies literature found that bereavement theory was particularly persuasive, with its emphasis on bereavement being a never-ending, but sometimes obstructive, process with key anniversaries being significant. Additionally, death studies pointed to the potential influence of 'dark tourism'.

The degree to which these various factors played a part in the modifications at one of the memorials to the JAL flight JL123 crash of 1985 were then thoroughly investigated. It was found that all three factors were met, although in terms of the trigger it was the bereavement process which was key and 'dark tourism' had seemingly played no part. The confirmation that group bereavement can go on for many years and can lead to modifications in a memorial, is particularly significant. Although it was found that in Japan the marking of certain anniversaries is tied to religious practice and may work in tandem with the bereavement process, the fact that the literature emphasises that bereavement is a potentially never-ending process in all cultures means that the findings are likely to have applicability outside of Japan. Indeed, this finding supports Woodthorpe's study which highlights that even in England, where some (e.g., Walter 1997, p. 137) have suggested the period of bereavement may be quite short, it could in fact last 20 years or more (Woodthorpe 2011, p. 30).

Having confirmed the significance of these three factors in the Japanese case study, it is important now for additional research to be done. First, the reason for the lack of the modification at other public transportation memorialisation sites in Japan should be investigated. Establishing the reasons for this lack of modification at other sites in terms of their failure to conform to the factors set out in the explanatory model developed would provide further validation for its effectiveness. Second, the cases where modifications had been made to memorials for public transportation accidents in other

countries, for example the Tenerife Airport Disaster in Spain (Tenerife Memorial 2019), the Air France flight AF4590 Concorde crash in France (Club Concorde 2017) and the TWA Flight TW800 in the USA (Thomas 2006), should also be researched and tested against the model developed in this article. Third, further research needs to be done into investigating the significance of particular individuals within an organisation in how the model developed for this article operates. In the case of Japan, it may be that the focus on groups and organisations are of greater significance than the work of an individual or a few individuals, but this may not be the case for all countries. Further, even in the case of JL123, as noted in the article, certain people seem to be especially active and additional analysis is needed into how the dynamic between the individuals and organisations work.

Although memorials for public transportation accidents are a very specific area, this article has demonstrated the value in studying them. The article has highlighted factors which are significant in the process and has particularly pointed to the importance of appreciating the influence of the bereavement process in memorialisation.

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